

AMENDMENTS  
TO  
THE WATER QUALITY CONTROL PLAN FOR THE  
SACRAMENTO RIVER AND SAN JOAQUIN RIVER  
BASINS

FOR  
THE CONTROL OF ORCHARD PESTICIDE RUNOFF AND  
DIAZINON RUNOFF INTO THE SACRAMENTO AND  
FEATHER RIVERS

FINAL STAFF REPORT

APPENDIX B

PEER REVIEW COMMENTS AND RESPONSES

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**Peer Review Comments and Responses**

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#### **B.1 Description of Peer Review Process**

Health and Safety Code § 57004 requires the Regional Board to have the scientific portions of its Basin Plan Amendments undergo external peer review. The State Water Resources Control Board has a contract with the University of California to conduct the peer review.

The Regional Board followed the “Guidelines for Obtaining External Scientific Peer Review” (Pettit, 1998) issued by the State Board’s Executive Director. The following provides a summary of the peer review process used for this Basin Plan Amendment:

1. On 3 January 2003, Regional Board staff sent a memo to the State Board’s peer review coordinator requesting peer review for the proposed Basin Plan Amendment (Karkoski, 2003a). The memo included general background on the problem and the scientific issues that are addressed by the proposed Basin Plan Amendment. The specific questions to be asked of the peer reviewers were also provided (these questions are shown in the comment/response below).
2. On 30 January 2003, the State Board’s peer review coordinator provided Regional Board staff with the names of the three peer reviewers who had agreed to perform the peer review (Bowes, 2003). All three reviewers are professors at the University of California, Berkeley. Dr. Kastenberg’s area of study in risk assessment; Professor Sedlak’s research is focused on fate and transport of pollutants in the aquatic environment; and Professor Sunding’s area of study includes agricultural and environmental economics.
3. On 4 February 2003, Regional Board staff contacted the peer reviewers and asked if they had participated in the development of the scientific basis for the proposed action and whether they had an economic conflict of interest with regard to the outcome of their comments or recommendations (Karkoski, 2003b). Dr. Kastenberg (Kastenberg, 2003a) and Professor Sedlak (Sedlak, 2003a) responded that they had not participated in the development of the proposed action nor had an economic interest in the outcome. Professor Sunding indicated that he had no conflicts in reviewing the proposed action (Karkoski, 2003c).
4. On 5 February 2003, Regional Board staff sent the peer reviewers a copy of the Staff Report that was the subject of the review along with copies of primary references (Karkoski, 2003d). The references sent to the peer reviewers were Novartis (1997); Giddings, et al (2000); USEPA (1985); Menconi and Cox (1994); Siepman and Finlayson (2000); University of Wisconsin-Superior and Great Lakes Environmental Center (2000); USEPA (1986); and McCarthy and Grober (2001). On 7 February 2003, Regional Board staff sent the peer reviewers a copy of the Health and Safety Code § 57004 (Karkoski, 2003e).

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5. The peer review comments were received from Professor Sedlak on 3 March 2003 (Sedlak, 2003b); from Dr. Kastenberg on 9 March 2003 (Kastenberg, 2003b); and from Professor Sunding on 21 March 2003 (Sunding, 2003a).

#### **B. 2 Peer Review Comments**

The comments provided by each peer reviewer and the Regional Board responses to those comments are provided below. The questions posed to the peer reviewers were the same for each reviewer and are shown in *italics*. In addition to the specific questions, the peer reviewers were asked to evaluate whether the scientific basis for the Basin Plan Amendment was adequately supported by the Staff report.

##### **B. 2.1 Peer Reviewer: David L. Sedlak**

#### **Questions Posed to Peer Reviewer Including their Comment and the Response**

*Did Cal DFG prepare its hazard assessment criteria in a manner consistent with USEPA guidelines?*

##### **Peer Review Comment[1]:**

Although I do not have much experience in the finer details of how USEPA guidelines are interpreted, the Cal DFG guidelines appear to be consistent with water quality criteria derived by other scientists using the USEPA guidelines.

##### **Response[1]:**

No change is suggested, so no response is required.

*Did the report adequately support our conclusions regarding alternative water quality objectives?*

##### **Peer Review Comment[2]:**

Two other water quality objectives are relevant to this evaluation. The first, which was proposed by Novartis, employs a methodology that is inconsistent with USEPA practice. While the approach of the Novartis expert panel may have some scientific validity, its lack of consistency with existing practice would make it hard to justify. A second, much older water quality objective, 9 ng/L, was proposed by the National Academy of Sciences (NAS) in 1973. One of the supporting documents indicated that the low value was attributable to an overly conservative assumption about acute-to-chronic ratios. However, the NAS study is not mentioned in the body of the staff report.

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**Response[2]:**

The staff report now includes a discussion of the NAS criterion.

*Does the report adequately demonstrate that the pest control measures are reasonable?*

**Peer Review Comment[3]:**

This question is outside of my area of expertise and I will defer to other reviewers.

**Response[3]:**

No change is suggested, so no response is required.

*Based on the rationale presented, does the report adequately demonstrate that it is reasonable to expect that water quality objectives can be achieved?*

**Peer Review Comment[4]:**

Although the report concludes that the objectives could be achieved, I believe that there is considerable uncertainty about this issue that needs to be discussed in the report. I also believe that it would be appropriate to compare current loadings with the loadings that would be allowed after the TMDL has been implemented. As it stands, it is very difficult for the reader to understand the changes needed to achieve water quality objectives. See comment [12] for more details.

**Response[4]:**

Appendix A of the staff report has been revised to include a comparison of current loading versus loading required under the proposed program. Additional discussion has been prepared in Section 5 of the staff report on the changes needed to achieve objectives.

*Does the report adequately support the method for deriving the TMDL?*

**Peer Review Comment[5]:**

In my opinion, the staff has made good progress in establishing a TMDL for diazinon given the uncertainties in the loading and runoff characteristics. However, I have some suggestions and concerns about the TMDL which are articulated in comments [12] and [13].

**Response[5]:** See response to comments [12] and [13].

*Does the report adequately support the method for deriving allocations?*

**Peer Review Comment[6]:** See comments [12] and [13].

**Response[6]:** See response to comments [12] and [13].

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**Additional Comments Offered by the Peer Reviewer**

**Peer Review Comment[7]:**

General Comment: Overall, the report represents a good synthesis of available data on diazinon and the risks that it poses to the Sacramento and Feather Rivers. I appreciate the way in which the staff members attempted to develop practical and flexible solutions to the problem. However, in several places I found the writing of the report to be confusing. Although this may be attributed to my lack of knowledge about topics such as hydrology and agricultural practices, I believe that any educated scientist should be able to understand a RWQCB staff report. Therefore, I ask the staff members to consider modifying the report to address my comments, even in cases where my lack of knowledge has led to a fundamental misconception. In other words, it may be necessary to translate parts of the document into a form that is more easily understood by a scientifically literate but otherwise uninformed reader.

**Response[7]:**

See responses to comments 8-15 below.

**Peer Review Comment[8]:**

Page 6: History of past actions. As indicated in the discussion of the 1996 lawsuit, diazinon had been linked with chlorpyrifos during the past decade. Previous USGS monitoring studies have shown that the two compounds are important to toxicity in waters of the Central Valley. In addition, the supporting document, “Water Quality Criteria for Diazinon and Chlorpyrifos” states that the two pesticides exhibit additive toxicity by acting on similar systems. Although the dormant season use of chlorpyrifos is only about 6% of the current use of diazinon (B37-B39), it does not necessarily mean that chlorpyrifos concentrations will be negligible, especially if chlorpyrifos is used on other crops. As a result, I believe that the additive effects of the two pesticides should be addressed. This is especially important in light of the statement about additive affects of pesticides on page 24.

**Response[8]:**

Appendix A of the staff report has been revised to include additional discussion of chlorpyrifos levels in the Sacramento and Feather rivers, as well as chlorpyrifos use patterns. Regional Board staff agrees that the additive toxicity of these pesticides should be addressed when they co-occur in the aquatic environment. Since diazinon and chlorpyrifos do not appear to co-occur in the Sacramento and Feather rivers, no change to the Basin Plan Amendment is proposed.

**Peer Review Comment[9]:**

Page 37: Effect on Production Costs: The current version of the draft reads, “...0% to YY%”. I presume that a value will be added here.

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**Response[9]:**

The text has been corrected.

**Peer Review Comment[10]:**

Page 44: Methods of achieving needed reductions in diazinon releases. The report and associated appendix mention the possible use of vegetated strips to reduce diazinon releases. These strips also will result in reductions in the release of other pesticides and nutrients. Although it might not be possible to take credit for these ancillary reductions in the TMDL, they should be mentioned in the staff report.

**Response[10]:**

Additional text has been added to the staff report to address the ancillary benefits of vegetated strips.

**Peer Review Comment[11]:**

Page 62: Statement about how diazinon use has peaked. I believe that it is inappropriate to draw any conclusions about future diazinon use based on the period starting in 1990. As indicated in the following paragraphs of the staff report, diazinon use depends on a variety of factors including climate. The period of peak diazinon use (1990-1993) corresponded to the end of a long drought whereas current data represent a period with normal rainfall.

**Response[11]:**

The wording in the staff report has been changed to clarify that no projections in future diazinon use are being made, but that current information indicates that incremental changes in management practices should be required to achieve compliance.

**Peer Review Comment[12]:**

Page 65: Load allocations. The hydrologic model yields load allocations in units of grams of diazinon released from orchards per day. I do not understand how this will be translated into concrete recommendations of actions to be taken to comply with the TMDL. As near as I can tell, the variable loading capacity model assumes that diazinon releases will be directly proportional to the amount of diazinon applied in a given area. If this is true, the maximum concentration of diazinon in the river will be related to the amount applied and decreases in application rates will translate into proportional decreases in ambient concentrations. Using this logic, it appears that significant decreases in diazinon use will be required to meet the TMDL. For example, the data in Appendix A indicate a peak diazinon concentration of approximately 250 ng/L was observed in 1994, when a total of 44, 827 pounds of diazinon was applied. To meet a water quality objective of 80 ng/L, the diazinon use would have to decrease to approximately 15,000 lbs/yr or about 30% compared to current application rates.

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While this may be achievable using the approach described in the staff report, it could become more difficult if rainfall patterns or insect populations change significantly.

#### **Response[12]:**

The reviewer comments that the variable loading capacity model assumes a proportional relationship between diazinon use and loading. There is no built-in assumption in the variable loading model regarding how the allocations would be met. Regional Board staff has reviewed a number of practices that could either result in reduction of the application of diazinon or could reduce the amount of diazinon leaving a field (section 5.1 and Appendix B of the staff report). Additional discussion has been provided in the staff report regarding the relationship between the allocations and on the ground changes.

#### **Peer Review Comment[13]:**

Page 67: Justification for not using the design loading capacity approach: The staff report states, “The primary reason for not selecting the design loading capacity approach is that it does not take into account the dynamic rainfall-runoff process.” Although the design capacity approach exhibits this shortcoming, the approach still is attractive because it considers historic trends in flow in the river systems, the frequency at which the objectives will be exceeded and it bases the load allocation on the actual mass leaving the orchards. In my opinion, the advantage of developing a load allocation in units that do not vary with the flow in the river is that it provides a tangible means of evaluating application rates and activities to reduce the amount of diazinon applied.

#### **Response[13]:**

Regional Board staff agrees that a benefit to the design flow approach is that it can provide a clear mass-based target for determining whether runoff from a given orchard is meeting the allocation. The primary disadvantage stated in the staff report, is that by not accounting for flow variations, a design-flow approach would require much greater reductions in loading than are necessary to achieve water quality objectives. If the Regional Board finds that the variable loading approach does not work (e.g. if the watershed based allocations are not leading to improvement), then the Board may need to revise the TMDL and allocations to reflect a design-flow approach.

#### **Peer Review Comment[14]:**

Page A21: Table A.4.1: Minor error-the totals of the mean diazinon use do not sum to the mean values in the table. All entries are low by 2. Also, the table never states the units (lb?).

#### **Response[14]:**

The errors in the table have been corrected and the units have been added.



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#### **Peer Review Comment[15]:**

Implementation plan: Although the RWQCB does not want to dictate the methods for achieving the water quality objective, it may be worthwhile to anticipate the possibility of a trading program for diazinon releases. In light of the increasing popularity of such trading programs, it might be worthwhile to discuss how trading would be implemented under this TMDL.

#### **Response[15]:**

The current implementation plan would not prevent the adoption of some sort of trading program on a sub-watershed basis. Regional Board staff is not proposing to add a discussion of trading issues for two primary reasons: 1) A trading program can be rather complex and must include a discussion of administration of the program; who can trade and how much do they have to trade; who bears the transaction cost of the trade; what assurances will be put in place to ensure that limits adjusted by the trade are met; and how potential “hot” spots will be addressed; and 2) so far there has been no call for a trading program by the potential participants in such a program. In addition, since the allocations are primarily by sub-watershed, rather than by individual discharger, the market for trading is rather limited.

#### **B.2.2Peer Reviewer: Dave Sunding**

#### **Peer Review Comment[16]:**

The approach taken I[in] the economic analysis rests on the assumption that there are alternatives to diazinon that will not result in reduced yield, or output per acre. This assumption is commonly made by regulatory agencies when dealing with pesticide regulations. Unfortunately, it has not proven to be very accurate in practice. My opinion is that the economic analysis in the Amendments is seriously flawed and is very likely to underestimate the true economic impacts of the runoff control measures.

The authors of the study use information on pest management alternatives compiled by the UCIPM program. As represented in the study, “The pest management and agronomic practices presented here are all considered ‘viable,’ that is, they offer favorable levels of pest control efficacy when compared to the base case.” At 91. This assumption glosses over a serious problem: if there are even small yield changes resulting from a change in pest management practices, then runoff control regulations can impose large costs on producers and, especially, consumers.

Taking a step back, consider pesticide regulation as a limitation on production technology. If farmers are observed to use a particular pesticide/technology, then by definition this technology provides them with the highest level of profit. Moving to a new technology will reduce profits either because pre[per]-acre costs

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are higher or because the alternative technology results in lower yields. It is tempting for experts to say that two technologies have the same level of productivity, and therefore disallowing the use of one technology will not lower productivity.

It is highly likely that a limiting diazinon use will lower yields, at least for some period of time as farmers adjust to alternative pest management techniques. In this event, the economic impacts of the orchard runoff limitations may far exceed the cost-based impacts detailed in Section 8.

#### **Response[16]:**

The primary comment offered by the reviewer is that the cost analysis uses a false assumption that no yield reduction will result if the grower needs to switch from diazinon. The commenter implies that the Board action will place a limitation on the technology available to growers that will result in an increase in cost or reduction in yield.

Regional Board staff has added additional text in Section 8 to clarify the basis for the cost analysis and summarize the available information. As discussed in the staff report (section 5.1 and Karkoski, et al, 2002), Regional Board staff only considered alternatives that would maintain adequate pest control. The reviewer has not provided any data specific to this Basin Plan Amendment that suggests yield reductions will result from reduced use of diazinon and Regional Board staff are not aware of any data that suggest that yield reductions would take place.

In addition, growers currently are using methods to control over-wintering pests, other than diazinon (see Figure 5.1). The data from the Department of Pesticide Regulation's Pesticide Use Report (CDPR, 2002) suggests that over 90% of the almonds harvested, 80% of the prunes harvested, and 75% of the peaches harvested currently use insecticides other than diazinon or no insecticide at all. This data suggests that growers do have pest control alternatives available to them that allow them to sustain yields.

Growers would also be able to reduce diazinon runoff through improved management practices (e.g. cover crops or vegetated filters), so elimination of the use of diazinon is not required to respond to this Basin Plan Amendment. There is no information to suggest that runoff reduction practices would result in reduction in yield. Potential increases in cost associated with these practices have been addressed in Section 8 of the staff report.

The reviewer also implies that the Regional Board is creating a pesticide regulation that would put a limitation on the production technology available to the grower. The Regional Board has no authority to regulate the use of pesticides, so there is no direct limitation on the production technology available to growers.

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#### **B.2.3 Peer Reviewer: William E. Kastenberg**

##### **Questions Posed to Peer Reviewer Including their Comment and the Response**

*Did the California Department of Fish and Game (CDFG) prepare its hazard assessment criteria in a manner consistent with U.S. EPA guidelines on the derivation of criteria for the protection of aquatic life?*

##### **Peer Review Comment[17]:**

Yes, the CDFG approach as outlined in Section 4.2.4.2. is consistent with the EPA guidelines. The Criterion Maximum Concentration (CMC) derived as 0.080 ug/L for acute toxicity and the Final Chronic Value (FCV) derived as 0.050 ug/L are appropriate for the data available.

##### **Response[17]:**

No change is suggested, so no response is required.

*Did the report adequately support our conclusions regarding alternative water quality objectives?*

##### **Peer Review Comment[18]:**

Yes, Chapter 4 contains an analysis using 5 alternative methods for determining potential water quality objectives (WQOs). These are summarized in Table 4.2 and include: No change in WQOs, Anti-degradation Policy, Effects Analysis as applied by Novartis Crop Protection, USEPA Methodology based on a USEPA contractor and the CDFG use of the USEPA methodology.

Chapter 4 of the Draft Report: Basin Plan Amendment Staff Report for the Control of Diazinon in the Sacramento and Feather Rivers, 2003 Peer Review Draft contains a thorough assessment of water quality objectives for Diazinon. Table 4.1 contains the CDFG proposed criteria with existing water quality criteria for Diazinon in the US and Canada. The CDFG criteria appear to be conservative on a relative basis for both protection of aquatic life and human health. Moreover, they appear protective of aquatic life, on an absolute basis when considering the USEPA methodology and the data available.

Section 4.3 of the Draft report evaluates the alternative methods for deriving WQOs against the “Beneficial Use Criterion” and Section 4.4 discusses consistency with respect to State and Federal Laws and Policies. This analysis is an accurate assessment of the 5 approaches for deriving the WQOs. The conclusion on page 40 is correct: “The methodology used to derive the CDFG water quality criteria was developed and approved by the USEPA, and is consistent with state and federal laws”. This statement is consistent with the analyses presented in the staff report.

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**Response[18]:**

No change is suggested, so no response is required.

*Does the report adequately demonstrate that the identified alternative pest control measures and mitigation measures are reasonable – i.e. can they be implemented in a manner consistent with good orchard management and pest control practices?*

**Peer Review Comment[19]:**

Yes, a Program of Implementation alternatives is presented in Appendix B and are evaluated in Section 5 of the report. Section 5.6 summarizes the analysis. The analysis appears to be correct, however, the justification for the 10% margin of safety utilized is buried in appendix A (page 55). This 10% margin seems to be justified, and should be called out in the Table of Contents.

**Response[19]:**

The margin of safety discussion has been revised within the staff report to include the discussion in Appendix A.

*Based on the rationale presented, does the report adequately demonstrate that it is reasonable to expect that water quality objectives can be achieved, when a combination of pest control alternatives and mitigation measures are applied?*

**Peer Review Comment[20]:**

Yes, the rationale appears to be correct. As noted above, appendix B contains a thorough analysis of implementation alternatives. The recommended time frame (2007-2009) for the implementation of the WQOs is adequate and suggests the possibility of dealing with other pest control products that end up in water runoff in an integrated manner.

**Response[20]:**

No change is suggested, so no response is required.

*Does the report adequately support the method for deriving the TMDL for the Sacramento and Feather Rivers?*

**Peer Review Comment[21]:**

The loading capacities and allocations in terms of the Total Maximum Daily Load or TMDL are discussed in Section 5.5 of the report and Appendix A. Two basic methods are discussed: The Pollutant Transport Method and the Hydrological-Based Method. Although a pollutant transport can be more accurate, its use was ruled out because of a lack of data regarding pesticide partitioning among the tree, the ground and the air. Other key data were also not available such as limited concentration data for rivers and key tributaries. Given a paucity of important data, the decision to use a Hydrologic-based method appears to be the correct one.

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Of the two Hydrologic-based methods, considered, the variable loading capacity approach was recommended over the design loading capacity approach. Both methods have drawbacks, however, while the variable loading capacity approach ignores frequency of exceedance, the design loading approach ignores dynamic rainfall-runoff processes, which may be more dominant. This appears to be a valid assumption.

**Response[22]:**

No change is suggested, so no response is required.

*Does the report adequately support the methods for deriving allocations (i.e. is the method supported by the information available to the Regional Board and is it consistent with the calculated loading capacities)?*

**Peer Review Comment[22]:**

Yes, Appendix A gives a comprehensive account of the consistency between the information available and the calculated loading capacities. Six allocation scenarios are considered in Appendix A, although two were not examined in full detail because of a lack of data.

**Response[22]:**

No change is suggested, so no response is required.

### **General Comment**

**Peer Review Comment[23]:**

The report could benefit from a short Executive Summary.

**Response[23]:**

An Executive Summary has been added.

## **B. 3Health and Safety Code § 57004**

**57004.** (a) For purposes of this section, the following terms have the following meanings:

(1) "Rule" means either of the following:

(A) A regulation, as defined in Section 11342.600 of the Government **Code**.

(B) A policy adopted by the State Water Resources Control Board pursuant to the Porter-Cologne Water Quality Control Act (Division 7 (commencing with Section 13000) of the Water **Code**) that has the effect of a regulation and that is adopted in order to implement or make effective a statute.

(2) "Scientific basis" and "scientific portions" mean those foundations of a rule that are premised upon, or derived from, empirical data or other scientific findings, conclusions,

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or assumptions establishing a regulatory level, standard, or other requirement for the protection of public health or the environment.

(b) The agency, or a board, department, or office within the agency, shall enter into an agreement with the National Academy of Sciences, the University of California, the California State University, or any similar scientific institution of higher learning, any combination of those entities, or with a scientist or group of scientists of comparable stature and qualifications that is recommended by the President of the University of California, to conduct an external scientific peer review of the scientific basis for any rule proposed for adoption by any board, department, or office within the agency. The scientific basis or scientific portion of a rule adopted pursuant to Chapter 6.6 (commencing with Section 25249.5) of Division 20 or Chapter 3.5 (commencing with Section 39650) of Division 26 shall be deemed to have complied with this section if it complies with the peer review processes established pursuant to these statutes.

(c) No person may serve as an external scientific peer reviewer for the scientific portion of a rule if that person participated in the development of the scientific basis or scientific portion of the rule.

(d) No board, department, or office within the agency shall take any action to adopt the final version of a rule unless all of the following conditions are met:

(1) The board, department, or office submits the scientific portions of the proposed rule, along with a statement of the scientific findings, conclusions, and assumptions on which the scientific portions of the proposed rule are based and the supporting scientific data, studies, and other appropriate materials, to the external scientific peer review entity for its evaluation.

(2) The external scientific peer review entity, within the timeframe agreed upon by the board, department, or office and the external scientific peer review entity, prepares a written report that contains an evaluation of the scientific basis of the proposed rule. If the external scientific peer review entity finds that the board, department, or office has failed to demonstrate that the scientific portion of the proposed rule is based upon sound scientific knowledge, methods, and practices, the report shall state that finding, and the reasons explaining the finding, within the agreed-upon timeframe. The board, department, or office may accept the finding of the external scientific peer review entity, in whole, or in part, and may revise the scientific portions of the proposed rule accordingly. If the board, department, or office disagrees with any aspect of the finding of the external scientific peer review entity, it shall explain, and include as part of the rulemaking record, its basis for arriving at such a determination in the adoption of the final rule, including the reasons why it has determined that the scientific portions of the proposed rule are based on sound scientific knowledge, methods, and practices.

(e) The requirements of this section do not apply to any emergency regulation adopted pursuant to subdivision (b) of Section 11346.1 of the Government **Code**.

(f) Nothing in this section shall be interpreted to, in any way, limit the authority of a board, department, or office within the agency to adopt a rule pursuant to the requirements of the statute that authorizes or requires the adoption of the rule.

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**B.4References**

- Bowes, G.W. 2003. Peer Reviewers for Proposed Basin Plan Amendment for the Control of Diazinon Runoff into the Sacramento and Feather Rivers. Memo from Gerald W. Bowes, State Water Resources Control Board, to Joe Karkoski, California Regional Water Quality Control Board, Central Valley Region. 30 January 2003.
- Giddings, J.M., Hall, L.W., and K.R. Solomon, 2000. Ecological risks of diazinon from agricultural use in the Sacramento-San Joaquin river basins, California. Risk Analysis, Vol. 20, No. 5, 2000.
- Karkoski, J. 2003a. Peer Review of Proposed Basin Plan Amendment for the Control of Diazinon Runoff into the Sacramento and Feather Rivers. Memo from Joe Karkoski, California Regional Water Quality Control Board, Central Valley Region, to Gerald Bowes, State Water Resources Control Board. Sent via e-mail and dated 3 January 2003.
- Karkoski, J. 2003b. Peer Review. Electronic mail from Joe Karkoski, California Regional Water Quality Control Board, Central Valley Region, to David Sedlak; David Sunding; and William Kastenberg (cc: Les Grober of the California Regional Water Quality Control Board, Central Valley Region). Sent 4 February 2003.
- Karkoski, J. 2003c. Record of Communication with David Sunding regarding potential conflicts in reviewing the Basin Plan Amendment. 7 February 2003.
- Karkoski, J. 2003d. Peer Review of Amendments to the Water Quality Control Plan for the Sacramento and Feather River Basins for the Control of Orchard Runoff into the Sacramento and Feather Rivers (Basin Plan Amendment). Letters from Joe Karkoski, California Regional Water Quality Control Board, Central Valley Region, to David Sedlak; David Sunding; and William Kastenberg (cc: Les Grober of the California Regional Water Quality Control Board, Central Valley Region). 5 February 2003.
- Karkoski, J. 2003e. Statutory Requirements for Peer Review. Electronic mail from Joe Karkoski, California Regional Water Quality Control Board, Central Valley Region, to David Sedlak; David Sunding; and William Kastenberg. Sent 7 February 2003.
- Kastenberg, W.E. 2003a. Re: Peer Review. Electronic mail from Bill Kastenberg to Joe Karkoski. Sent 6 February 2003.

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- Kastenberg, W.E. 2003b. Peer Review of Proposed Basin Plan Amendment for the Control of Diazinon Runoff into the Sacramento and Feather Rivers. Letter from William E. Kastenberg to Joe Karkoski. Sent 10 March 2003.
- McCarthy and Grober, 2001. Total maximum daily load for selenium in the lower San Joaquin River. Report of the California Regional Water Quality Control Board, Central Valley Region. August 2001.
- Menconi, M. and C. Cox. 1994. Hazard assessment of the insecticide diazinon to aquatic organisms in the Sacramento-San Joaquin river system. California Department of Fish and Game. Environmental Services Division Administrative Report 94-2. Rancho Cordova, CA.
- Novartis Crop Protection, Inc. 1997. Ecological risk assessment of diazinon in the Sacramento-San Joaquin Basins. Technical Report 11/97. Environmental and Public Affairs Department. Greensboro, NC
- Sedlak, D. 2003a. Re: Peer Review. Electronic mail from David Sedlak to Joe Karkoski. Sent 4 February 2003.
- Sedlak, D. 2003b. Re: Peer Review of Amendments to the Water Quality Control Plan for the Sacramento and San Joaquin River Basins for the Control of Orchard Runoff into the Sacramento and Feather Rivers. Letter from David Sedlak to Joe Karkoski. 3 March 2003.
- Siepmann, S. and B.J. Finlayson. 2000. Water quality criteria for diazinon and chlorpyrifos. California Department of Fish and Game. Office of Spill Prevention and Response Administrative Report 00-3. Sacramento, CA.
- Sunding, D. 2003. Review. Electronic mail from Dave Sunding to Joe Karkoski. Sent 21 March 2003.
- USEPA (United States Environmental Protection Agency). 1985. Guidelines for deriving numerical national water quality criteria for the protection of aquatic organisms and their uses. Office of Research and Development, Washington, D.C.
- USEPA. 1986. Technical guidance manual for performing wasteload allocations Book VI, design conditions: Chapter 1 – stream design flow for steady-state modeling. US EPA. Washington, D.C.
- University of Wisconsin-Superior and Great Lakes Environmental Center. 2000. Ambient aquatic life water quality criteria: diazinon. Prepared by University of Wisconsin-Superior and Great Lakes Environmental Center for the USEPA Office of Water, Washington, D.C. EPA Contract No. 68-C-98-134. August 31, 2000.